CLAIMS

1.   A method of providing a Premature Descent Alert for an aircraft during a final landing approach, the method comprising:

determining a plurality of Final Approach Flight Safety Altitudes for each of a plurality of runways;

storing the determined Final Approach Flight Safety Altitudes in association with each corresponding runway upon a media readable by a Terrain Awareness and Warning System ("TAWS");

identifying upon which runway an aircraft will land; and

generating a Premature Descent Alert during the final landing approach for the aircraft to the runway by reference to the determined Final Approach Flight Safety Altitudes for the identified runway.

2.   The method of claim 1, wherein determining the Final Approach Flight Safety Altitudes comprises evaluating runway elevation data and terrain data for each runway, and at least one of obstacle data and flight approach data for each runway.

3.   The method of claim 1, wherein the Final Approach Flight Safety Altitudes further comprise Final Approach Flight Safety Altitudes corresponding to each of at least two approaches to at least one of the runways.

4.   The method of claim 1, wherein the Final Approach Flight Safety Altitudes corresponding to each of the runways correspond to determined distances from each runway, the final approach safety altitudes representing step-down points on a flight safety altitude for reference by an aircraft landing on the runway.

5.   The method of claim 4, wherein the Final Approach Flight Safety Altitudes are between a Final Approach Fix point for the runway and a runway.

6.   The method of claim 1, wherein the plurality of Final Approach Flight Safety Altitudes are determined prior to the aircraft's flight during which the Final Approach Flight Safety Altitudes are referenced.

7.   The method of claim 1, wherein at least a portion of the plurality of Final Approach Flight Safety Altitudes are determined during the aircraft's flight in which the Final Approach Safety Altitudes are referenced.

8.   The method of claim 1, wherein at least a portion of the Final Approach Flight Safety Altitudes are each determined such that they lie upon a curve that approximates a vertical flight path.

9.   The method of claim 8, wherein at least a portion of the curve is a quadratic curve.

10.   The method of claim 8, wherein the portion lying upon a curve that approximates a vertical flight path is within a segment nearest the runway.

11.   The method of claim 8, wherein the curve approximates a dive and drive flight path.

12.   The method of claim 1, wherein determining the Final Approach Flight Safety Altitudes for a particular runway comprises at least partially basing a portion of the Final Approach Flight Safety Altitudes upon a Minimum Descent Altitude for the runway.

13.   The method of claim 1, wherein a portion of the plurality of Final Approach Flight Safety Altitudes are determined during the aircraft's flight in which the Final Approach Safety Altitudes are referenced and are determined such that they lie upon a curve that approximates a vertical flight path.

14.   The method of claim 13, wherein the portion of Final Approach Flight Safety Altitudes determined such that they lie upon a curve that approximates a vertical flight path is within a segment nearest the runway.

15.   A Terrain Awareness and Warning System (TAWS) for an aircraft, the TAWS comprising:

at least one information database configured to store elevation and position information
    for a terrain region and a plurality of Final Approach Flight Safety Altitude values
    specific to each of a plurality of runways;

a look-ahead warning generator configured to receive indications of terrain clearance
    alerts and communicate the indications by at least one of a visual display and an
    aural alert; and

a processor coupled to the information database and the look-ahead warning generator,
    the processor configured to identify a runway on which the aircraft will land, and
    employ the Final Approach Flight Safety Altitude values for the identified runway
    to cause the look-ahead warning generator to generate an alert if the aircraft flies
    below the Final Approach Flight Safety Altitude values for the identified runway
    when the aircraft is in its final approach to the runway.

16.   The TAWS of claim 15, wherein the Final Approach Flight Safety Altitudes stored in the at least one information database comprise altitudes determined upon consideration of at least runway elevation data and terrain data for each runway, and at least one of obstacle data and flight approach data for each runway.

17.   The TAWS of claim 15, wherein the Final Approach Flight Safety Altitudes specific to each of the plurality of runways further comprise Final Approach Flight Safety Altitudes specific to each of at least two approaches to at least one of the runways.

18.   The TAWS of claim 15, wherein the Final Approach Flight Safety Altitudes specific to each of the runways correspond to predetermined distances from each runway, the final approach safety altitudes representing step-down points of a flight safety altitude for reference by an aircraft landing on the runway.

19.   The TAWS of claim 18, wherein the Final Approach Flight Safety Altitudes are between a Final Approach Fix point for the runway and a runway.

20.   The TAWS of claim 15, wherein at least a portion of the Final Approach Flight Safety Altitudes are each determined such that they lie upon a curve that approximates a vertical flight path.

21.   The TAWS of claim 20, wherein the portion of the Final Approach Flight Safety Altitudes determined such that they lie upon a curve that approximates a vertical flight path is determined during the flight in which the Final Approach Flight Safety Altitudes are referenced.

22.   The TAWS of claim 20, wherein at least a portion of the curve is a quadratic curve.

23.   The TAWS of claim 20, wherein the portion lying upon a curve that approximates a vertical flight path is within a segment nearest the runway.

24.   The TAWS of claim 20, wherein the curve approximates a dive and drive flight path of the aircraft.

25.   The TAWS of claim 15, wherein the Final Approach Flight Safety Altitudes stored in the at least one information database comprise altitudes at least partially determined upon consideration of a Minimum Descent Altitude for the runway.

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